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(71) Applicant *(for all designated States except US)*: **PROTASIS CORPORATION** [US/US]; 734 Forest St., Marlborough, MA 01752 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **STRAND, David** [US/US]; 16 Nason Hill Lane, Sherborn, MA 01770 (US). **LEATZOW, Dan, M.** [US/US]; 545 Southeast South Street, Pullman, WA 99163 (US).

(74) Agent: **MCDERMOTT, Peter, D.**; Banner & Witcoff, Ltd., 28th floor, 28 State St., Boston, MA 02109 (US).

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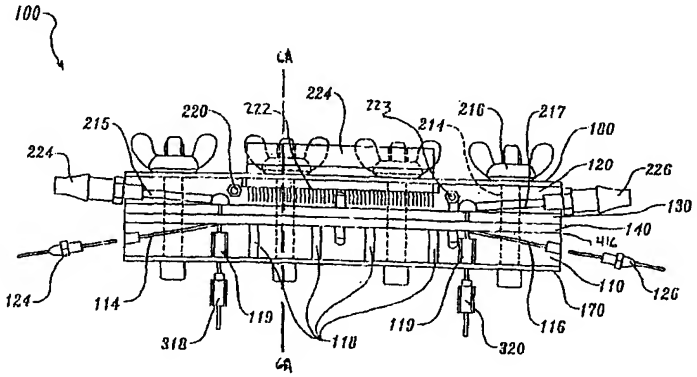
(54) Title: METHOD AND APPARATUS DETERMINING THE ISOELECTRIC POINT OF CHARGED ANALYTE



(57) Abstract: Devices are provided for determining the isoelectric point of a charged analyte, comprising a titration chamber and an electrode chamber. The electrode chamber comprises at least two electrodes, for example, an electrode array. Either or both of the titration chamber and the electrode chamber may have a shaped geometry. The electrodes are operative, in conjunction with the shaped geometry of the chamber(s) where appropriate, to generate an electric field gradient in the titration chamber. Permeable material separates the titration chamber and the electrode chamber. A pH Sensor is located in the titration chamber for obtaining the pH of the first fluid. Certain preferred embodiments further include an analyte band detector for detecting the presence and optionally the location of a focused band of charged solute. Methods are provided for determining the isoelectric point of a charged analyte comprising introducing a carrier fluid comprising a Charge analyte into the titration chamber of a device as just described and applying an electric field gradient to focus the charged analyte into a focused band. The pH of the carrier fluid is incremented or adjusted to shift the location of the focused band of charged analyte, and the pH and location of the focused band of charged analyte are obtained for a plurality of locations and pH's and the isoelectric point is determined from such data.

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